

may combine the sales of gasoline-fueled light-duty vehicles, light light-duty trucks, and heavy light-duty trucks in determining compliance with the required 1994 and 1995 model year phase-in percentages as included in table A94-16.

(3)(i) Sales percentages for the purposes of determining compliance with paragraphs (k)(1) and (k)(2) of this section shall be based on total actual and, at the manufacturer's option, combined U.S. sales of light-duty vehicles, light light-duty trucks, and heavy light-duty trucks of the applicable model year by a manufacturer to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale.

(ii) The manufacturer may petition the Administrator to allow actual volume produced for U.S. sales to be used in lieu of actual U.S. sales for purposes of determining compliance with the implementation schedule sales percentages of table A94-16. Such petition shall be submitted within 30 days of the end of the model year to the Manufacturers Operations Division. For the petition to be granted, the manufacturer must establish to the satisfaction of the Administrator that actual production volume is functionally equivalent to actual sales volume. Approval of the use of production data will be presumed unless otherwise notified by the Agency within 30 days of submittal of the petition.

(iii) The manufacturer may count towards the sales percentages those light-duty vehicles, light light-duty trucks, and heavy light-duty trucks of the applicable model year sold in the state of California or in jurisdictions which have adopted the California emission standards under section 177 of the Clean Air Act if those light-duty vehicles, light light-duty trucks, and heavy light-duty trucks have been certified to meet the federally mandated cold CO standards. If this option is taken, all light-duty vehicles, light light-duty trucks and heavy light-duty trucks sold in California and such jurisdictions shall be counted toward the total upon which the sales percentage is based. If this option is not taken, light-duty vehicles, light light-duty trucks, and heavy light-duty trucks

sold in California or such jurisdictions are to be excluded from counting toward either the total upon which the sales percentage is based or the sales percentage itself.

(iv) Small volume manufacturers, as defined in § 86.092-14(b) (1) and (2), are exempt from the implementation schedules of table A94-16 for model years 1994 and 1995. This exemption does not apply to small volume engine families as defined in § 86.092-14(b)(5).

(v) The manufacturer must state at the time of applying for the Certificate, based on projected U.S. sales or projected production for U.S. sale, which engine families will be used to attain the required implementation schedule sales percentages.

[56 FR 25742, June 5, 1991, as amended at 57 FR 31899, July 17, 1992; 59 FR 48495, Sept. 21, 1994; 60 FR 34335, June 30, 1995; 62 FR 47120, Sept. 5, 1997]

§ 86.094-11 Emission standards for 1994 and later model year diesel heavy-duty engines and vehicles.

(a)(1) Exhaust emissions from new 1994 and later model year diesel heavy-duty engines shall not exceed the following (optional for 1994 through 1996 model year new natural gas- and liquefied petroleum gas-fueled heavy-duty engines):

(i)(A) *Hydrocarbons (for diesel engines fueled with either petroleum-fuel or liquefied petroleum gas)*. 1.3 grams per brake horsepower-hour (0.48 gram per megajoule), as measured under transient operating conditions.

(B) *Total Hydrocarbon Equivalent (for methanol-fueled diesel engines)*. 1.3 grams per brake horsepower-hour (0.48 gram per megajoule), as measured under transient operating conditions.

(C) *Nonmethane hydrocarbons (for natural gas-fueled diesel engines)*. 1.2 grams per brake horsepower-hour (0.45 gram per megajoule), as measured under transient operating conditions.

(ii) *Carbon monoxide*. (A) 15.5 grams per brake horsepower-hour (5.77 grams per megajoule), as measured under transient operating conditions.

(B) 0.50 percent of exhaust gas flow at curb idle (methanol-, natural gas- and liquefied petroleum gas-fueled diesel only).

(iii) *Oxides of nitrogen.* (A) 5.0 grams per brake horsepower-hour (1.9 grams per megajoule), as measured under transient operating conditions.

(B) A manufacturer may elect to include any or all of its diesel heavy-duty engine families in any or all of the NO_x averaging, trading, or banking programs for heavy-duty engines, within the restrictions described in § 86.094–15. If the manufacturer elects to include engine families in any of these programs, the NO_x FELs may not exceed 6.0 grams per brake horsepower-hour (2.2 grams per megajoule). This ceiling value applies whether credits for the family are derived from averaging, trading or banking programs.

(iv) *Particulate.* (A) For diesel engines to be used in urban buses, 0.07 gram per brake horsepower-hour (0.026 gram per megajoule), as measured under transient operating conditions.

(B) For all other diesel engines only, 0.10 gram per brake horsepower-hour (0.037 gram per megajoule), as measured under transient operating conditions.

(C) A manufacturer may elect to include any or all of its diesel heavy-duty engine families in any or all of the particulate averaging, trading, or banking programs for heavy-duty engines, within the restrictions described in § 86.094–15. If the manufacturer elects to include engine families in any of these programs, the particulate FEL may not exceed:

(1) For engine families intended for use in urban buses, 0.25 gram per brake horsepower-hour (0.093 gram per megajoule).

(2) For engine families *not* intended for use in urban buses, 0.60 gram per brake horsepower-hour (0.22 gram per megajoule).

(3) The ceiling values in paragraphs (a)(1)(iv)(C) (1) and (2) of this section apply whether credits for the family are derived from averaging, trading, or banking programs.

(b)(1) The opacity of smoke from new 1994 and later model year diesel heavy-duty engines shall not exceed (optional for 1994 through 1996 model year gas-fueled diesel heavy-duty engines):

(i) 20 percent during the engine acceleration mode.

(ii) 15 percent during the engine lugging mode.

(iii) 50 percent during the peaks in either mode.

(2) The standards set forth in paragraph (b)(1) of this section refer to exhaust smoke emissions generated under the conditions set forth in subpart I of this part and measured and calculated in accordance with those procedures.

(3) *Evaporative emissions* (total of non-oxygenated hydrocarbons plus methanol) from 1994 and later model year heavy-duty vehicles equipped with methanol-fueled diesel engines shall not exceed:

(i) For vehicles with a Gross Vehicle Weight Rating of up to 14,000 lbs, 3.0 grams per test.

(ii) For vehicles with a Gross Vehicle Weight Rating of greater than 14,000 lbs, 4.0 grams per test.

(4)(i) For vehicles with a Gross Vehicle Weight Rating of up to 26,000 lbs, the standards set forth in paragraph (b)(3) of this section refer to a composite sample of evaporative emissions collected under the conditions set forth in subpart M and measured in accordance with those procedures.

(ii) For vehicles with a Gross Vehicle Weight Rating of greater than 26,000 lbs, the standard set forth in paragraph (b)(3)(ii) of this section refers to the manufacturers, engineering design evaluation using good engineering practice (a statement of which is required in § 86.091–23(b)(4)(ii)).

(c) No crankcase emissions shall be discharged into the ambient atmosphere from any new 1994 or later model year methanol-fueled diesel, or any naturally-aspirated diesel heavy-duty engine (optional for 1994 through 1996 model year natural gas- and liquefied petroleum gas-fueled engines). For petroleum-, natural gas- and liquefied petroleum gas-fueled engines only; this provision does not apply to engines using turbochargers, pumps, blowers, or superchargers for air induction.

(d) Every manufacturer of new motor vehicle engines subject to the standards prescribed in this section shall, prior to taking any of the actions specified in section 203(a)(1) of the Act, test or cause to be tested motor vehicle engines in accordance with applicable

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procedures in subpart I or N of this part to ascertain that such test engines meet the requirements of paragraphs (a), (b), and (c) and (d) of this section.

(Secs. 202, 203, 206, 207, 208, 301a, Clean Air Act, as amended; 42 U.S.C. 7521, 7522, 7525, 7541, 7542, 7601a)

[50 FR 10654, Mar. 15, 1985, as amended at 54 FR 14466, Apr. 11, 1989; 57 FR 19538, May 7, 1992; 58 FR 15799, Mar. 24, 1993; 59 FR 48497, Sept. 21, 1994; 62 FR 47120, Sept. 5, 1997]

§ 86.094–13 Light-duty exhaust durability programs.

(a)(1) This section describes the various durability programs available to manufacturers for determining exhaust deterioration factors (DFs) for the certification of 1994 and beyond model year light-duty vehicles and light-duty trucks. While this section describes many of the important elements of these durability programs, it is not intended as an exhaustive list of all requirements applicable either to these programs or to the certification process.

(2) The durability programs consist of various elements, such as a statement of applicability, a service accumulation method, vehicle/component selection methods, durability data vehicle compliance requirements, in-use verification requirements, optional elements, data reporting requirements, and additional requirements. Cross references to other sections in this subpart are indicated where appropriate.

(b) The following table summarizes the durability programs available to all manufacturers of light-duty vehicles and light-duty trucks. The Tier 1 and Tier 0 standards cited in the table are those specified in § 86.094–8 (for light-duty vehicles) and § 86.094–9 (for light-duty trucks). The durability programs described in this section are separate and distinct alternatives, such that determination of an exhaust deterioration factor under one program does not require compliance with the requirements of a different durability program.

Class	Standards	Durability program name	Optional elements
Light-duty Vehicles	Tier 1	Standard AMA	Carryover. Extrapolation. Substitute AMA.
		Production AMA	Carryover. Extrapolation. Substitute AMA.
	Tier 0	Alternative Service Accumulation	Carryover.
		Standard AMA	Carryover. Substitute AMA.
Light-duty Trucks	Tier 1 & Tier 0	Production AMA	Carryover. Substitute AMA.
		Alternative Service Accumulation	Carryover.
		Standard Self-Approval	Carryover.
		Alternative Service Accumulation	Carryover.

(c) *Standard AMA durability program—*
(1) *Applicability.* The standard AMA durability program is applicable to light-duty vehicles in model years 1994 and beyond.

(2) *Service accumulation method.* The method shall be mileage accumulation performed on whole durability data vehicles, using the Durability Driving Schedule (commonly referred to as the AMA schedule) specified in appendix IV to this part. The provisions of § 86.094–26(a), which include vehicle weight requirements, the duration of mileage accumulation, and the specification of emission tests to be performed during

the mileage accumulation, shall apply. Scheduled and unscheduled maintenance may be performed on the vehicle in accordance with the provisions of § 86.094–25.

(3) *Vehicle/component selection method.* Durability data vehicles shall be selected by the Administrator as required in § 86.090–22(a) and in accordance with the provisions of § 86.094–24(c)(1). Typically, the Administrator selects one durability data vehicle to represent each engine-system combination. The selection of durability data vehicles is also governed by § 86.091–7(a)(2)(i)(A), which generally requires